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(71) Applicant: MITSUBISHI ELECTRIC CORP

(72) Inventor: URUSHIBATA HIROAKI

(54) MELTED CARBONATE TYPE FUEL CELL

(57) Abstract:

PURPOSE: To improve the adhesion of an electrical insulator and a base body, and to acquire a melted carbonate type fuel cell to prevent the corrosion of the base body and the loss of electrolyte owing to a pin hole or a crack produced at the electrical insulator, by forming a wet sealing member between the base body and the electrical insulator through an electrolyte-resisting layer which is adhesive to both the insulator and the base body.

CONSTITUTION: A stainless material is used as a base body 15. As the material for an electrolyte-resisting layer 17, one metal unit out of Ni, Al, Cr, and Fe, or one alloy mainly of at least one of Ni, Al, Cr, and Fe, such as Ni-Cr, Ni-Al, or Ni-Cr-Al alloy is available, and Al is used for this purpose, tor example. Then a bipolar plate 3 is heat-treated in a reducing atmospheric furnace to make the base body 15 and the Al 17 into alloys. This alloy layer demonstrates a strong anticorrosion property against the melted carbonate, and exercises the thermal expansion rate between that of the Al_2O_3 layer 16 coated thereover and that of the base body 15. Therefore, it relaxes the difference of the thermal expansion rates of the base body 15 and the Al_2O_3 16, preventing the easy peeling off of the Al_2O_3 layer.